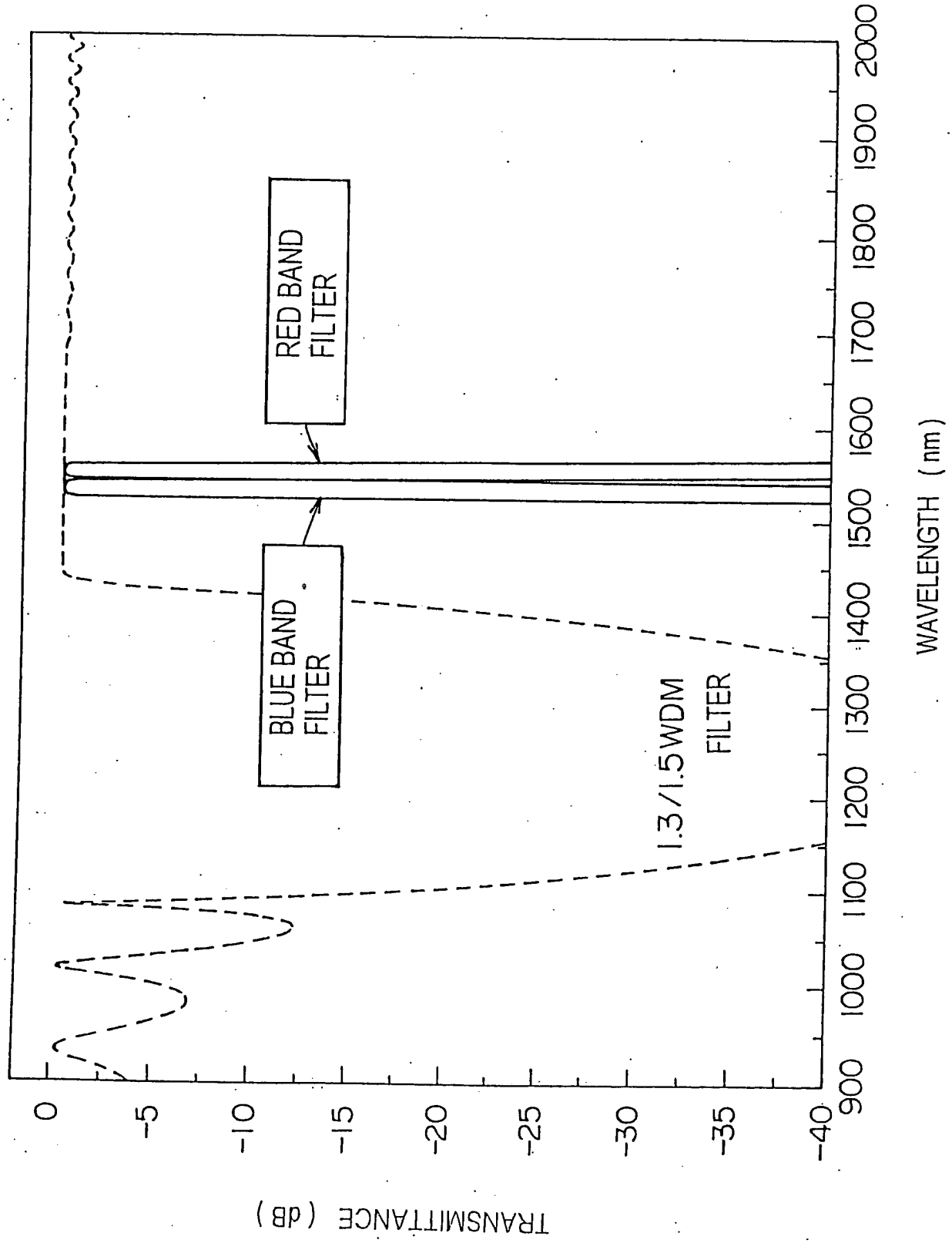

RED BAND FILTER
BLUE BAND FILTER
1.3/1.5WDM FILTER
0
-5
-10
-15
-20
-25
-30
-35
-40
TRANSMITTANCE (dB)
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
WAVELENGTH (nm)

FIG. 1

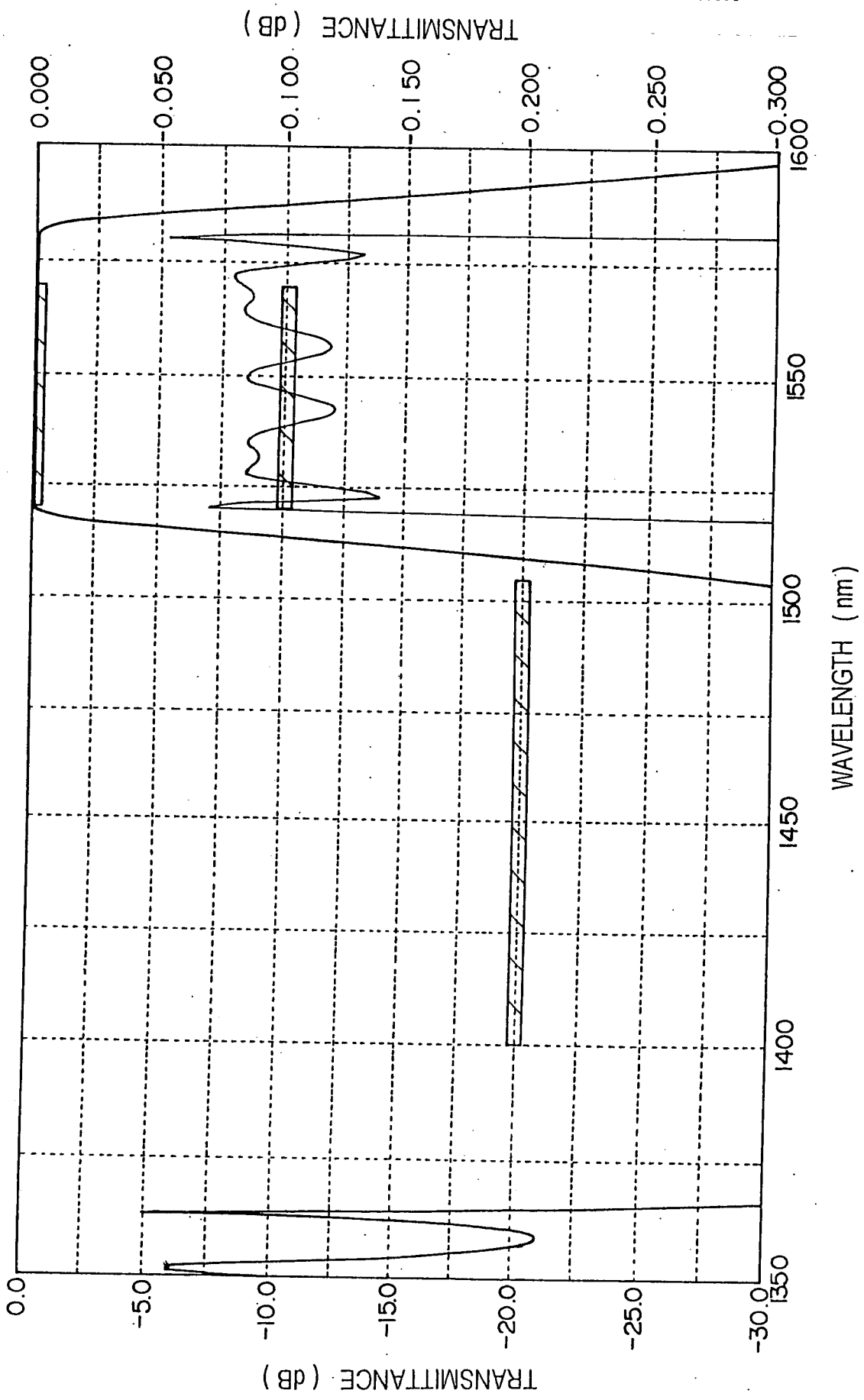

TRANSMITTANCE (dB)
0.000
-0.050
-0.100
-0.150
-0.200
-0.250
-0.300
1600
1550
1500
1450
1400
1350
WAVELENGTH (nm)
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
-30.0
TRANSMITTANCE (dB)

FIG. 2

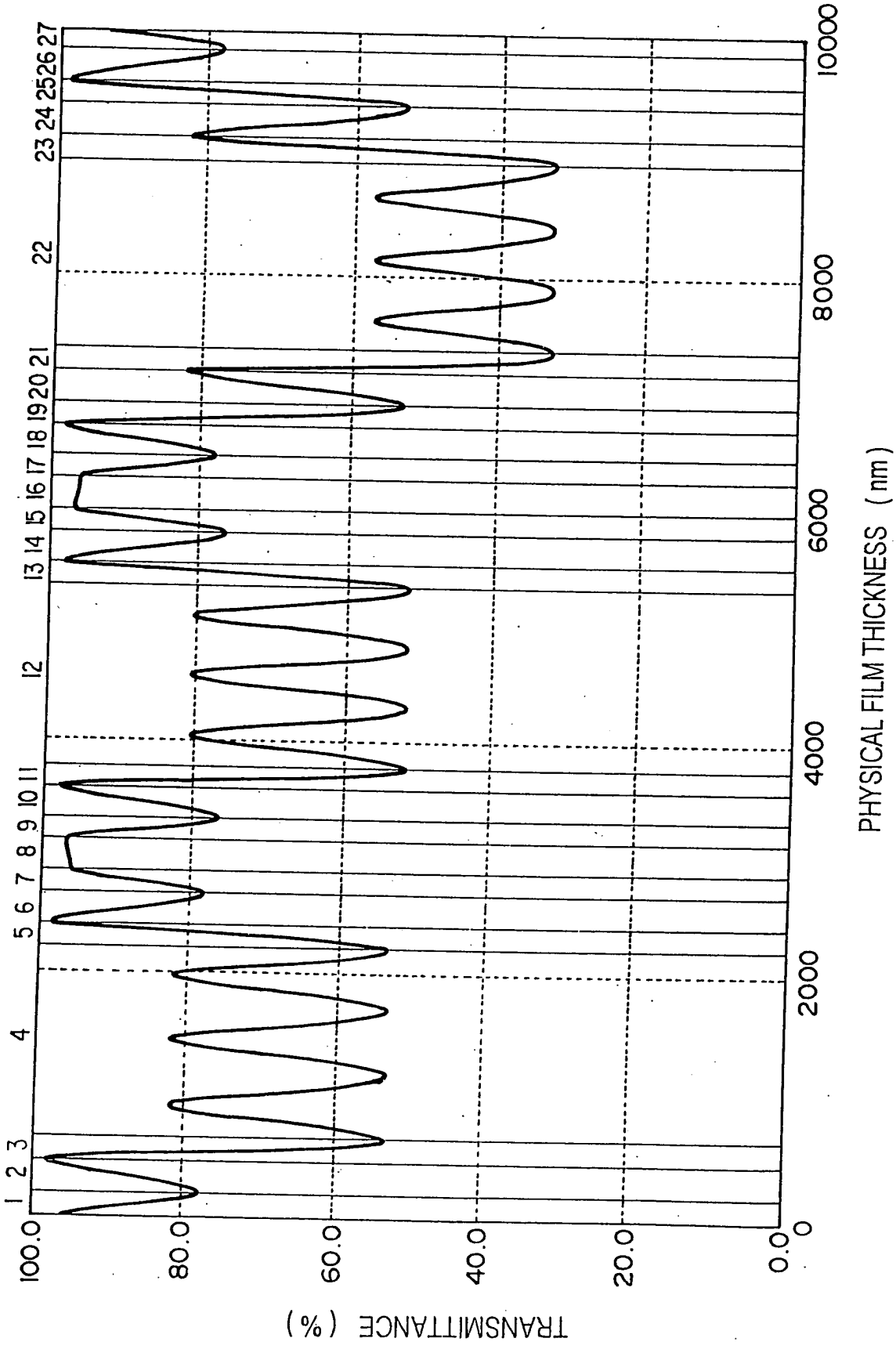

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
100.0
80.0
60.0
40.0
20.0
0.0
TRANSMITTANCE (%)
0
2000
4000
6000
8000
10000
PHYSICAL FILM THICKNESS (nm)

FIG. 3

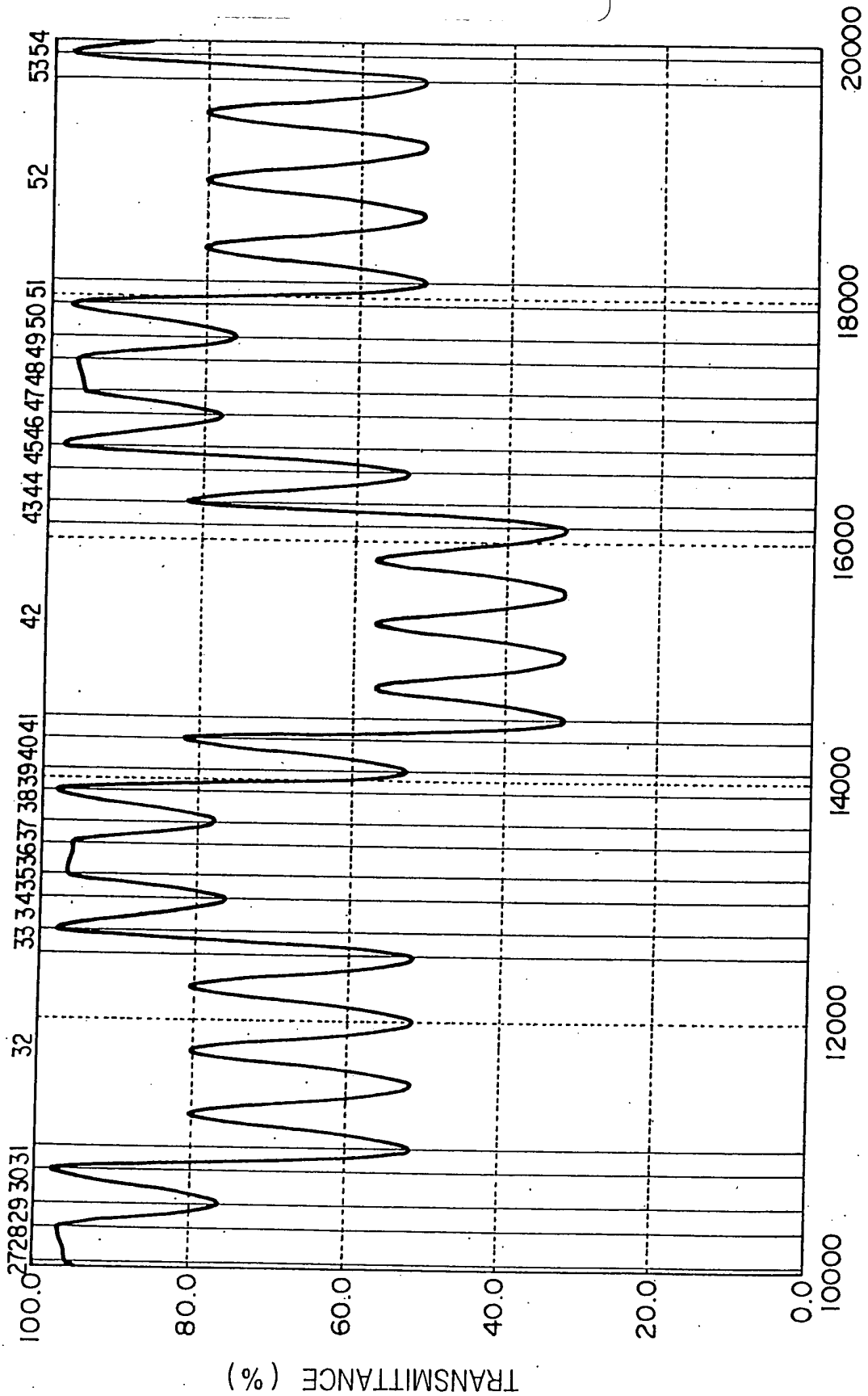

TRANSMITTANCE (%)
100.0
80.0
60.0
40.0
20.0
0.0
PHYSICAL FILM THICKNESS (nm)
10000
12000
14000
16000
18000
20000
27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54

FIG. 4

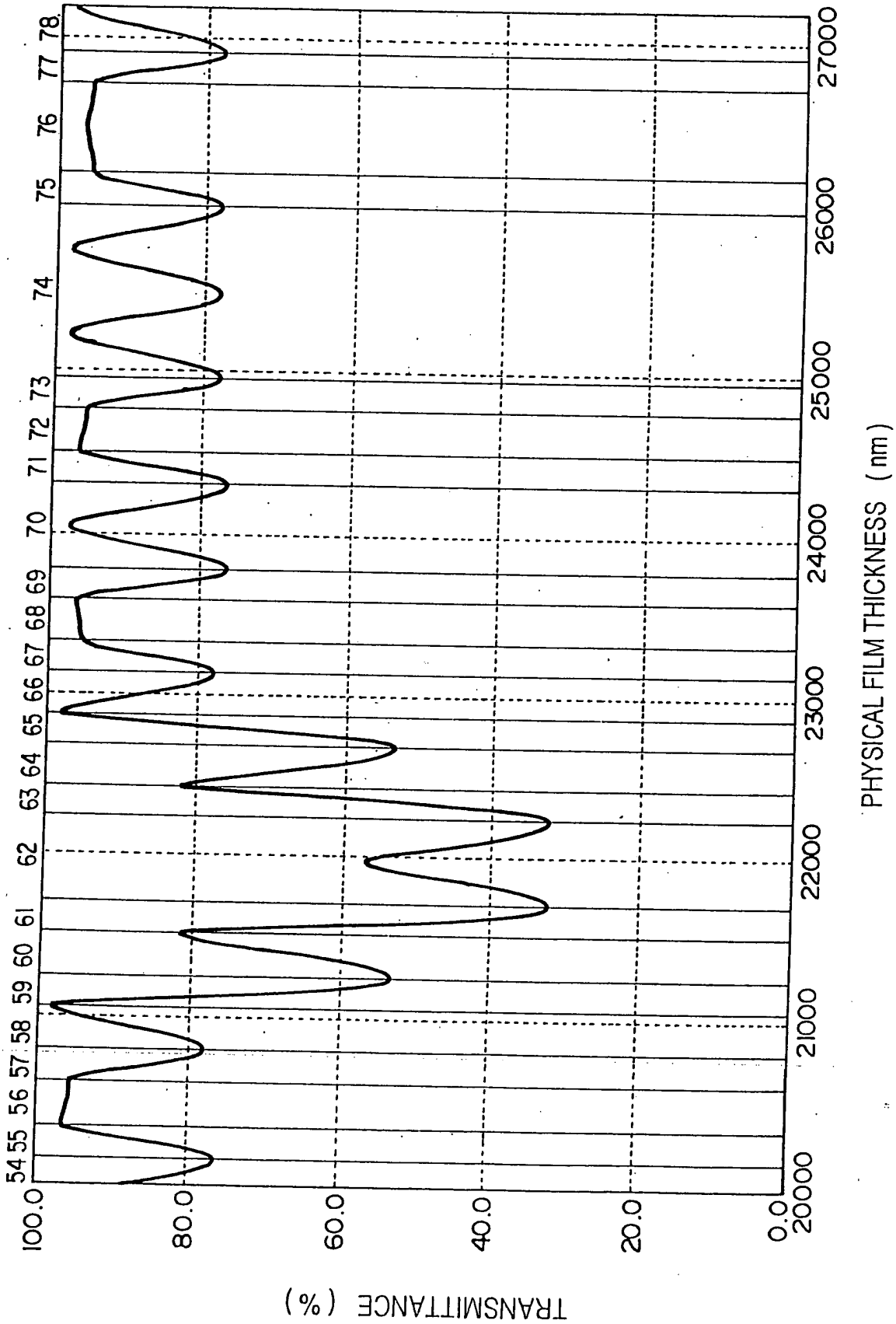

78
77
76
75
74
73
72
71
70
69
68
67
66
65
64
63
62
61
60
59
58
57
56
55
54
27000
26000
25000
24000
23000
22000
21000
20000
PHYSICAL FILM THICKNESS (nm)
100.0
80.0
60.0
40.0
20.0
0.0
TRANSMITTANCE (%)

FIG. 5

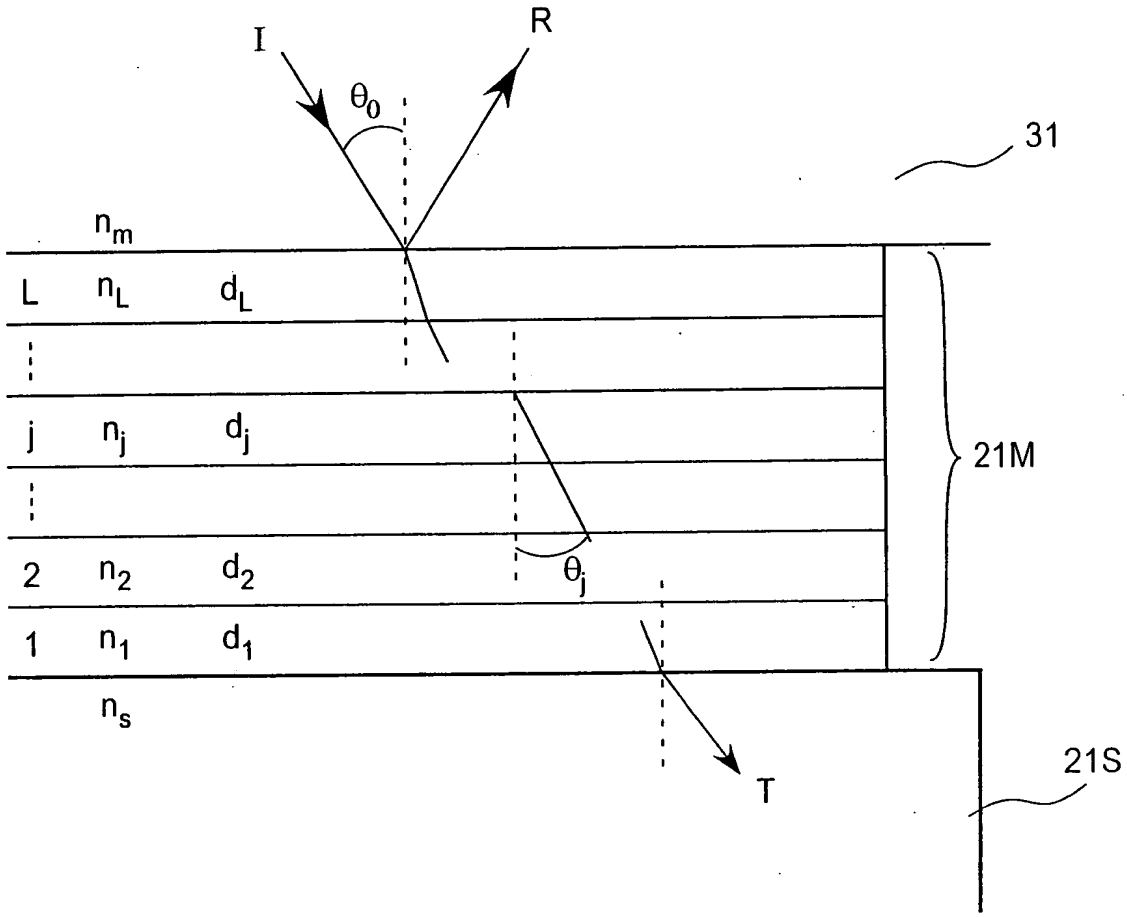


FIG. 6

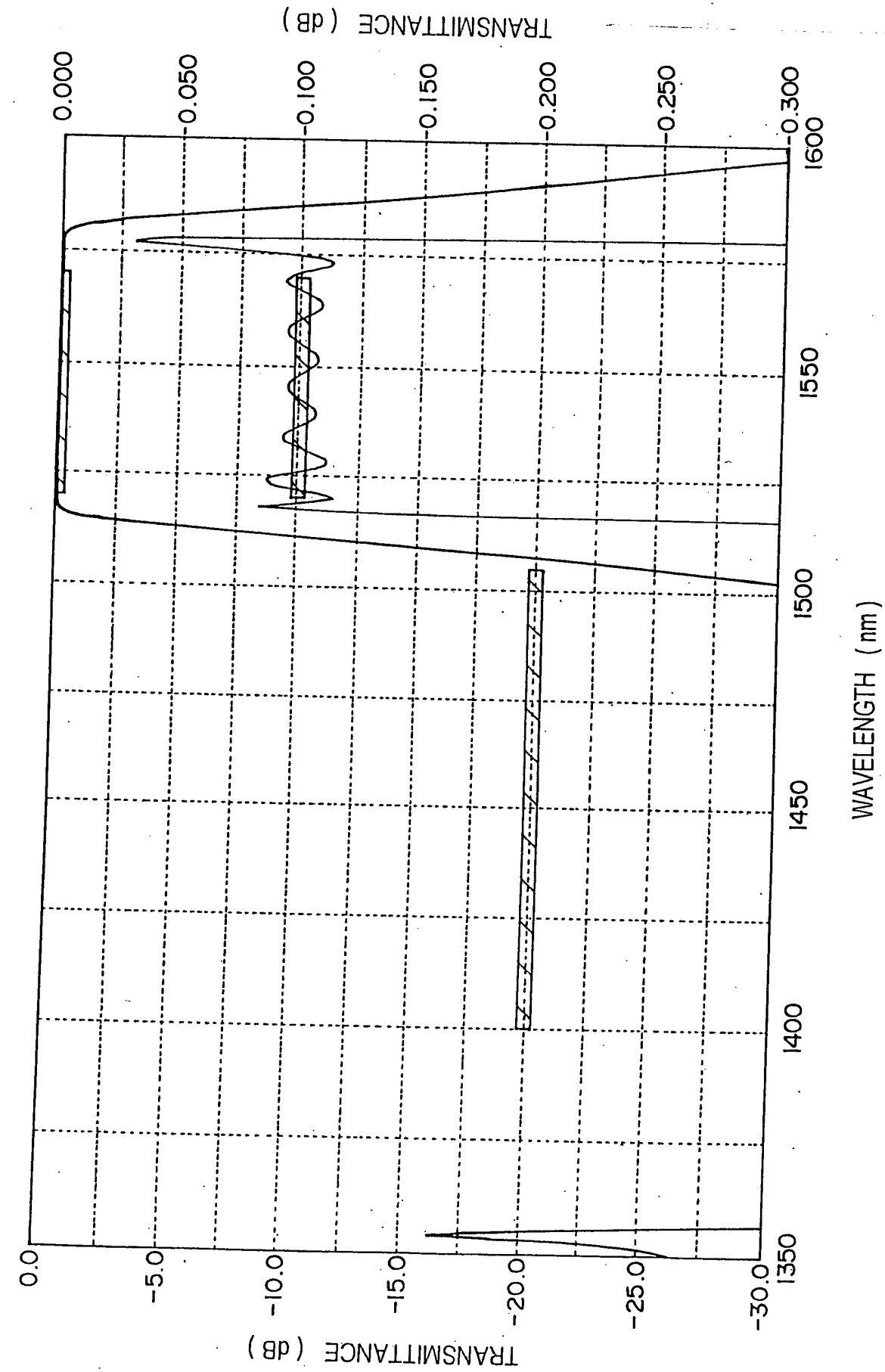

TRANSMITTANCE (dB)
0.000
-0.050
-0.100
-0.150
-0.200
-0.250
-0.300
1600
1550
1500
1450
1400
1350
WAVELENGTH (nm)
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
-30.0
TRANSMITTANCE (dB)

FIG. 7

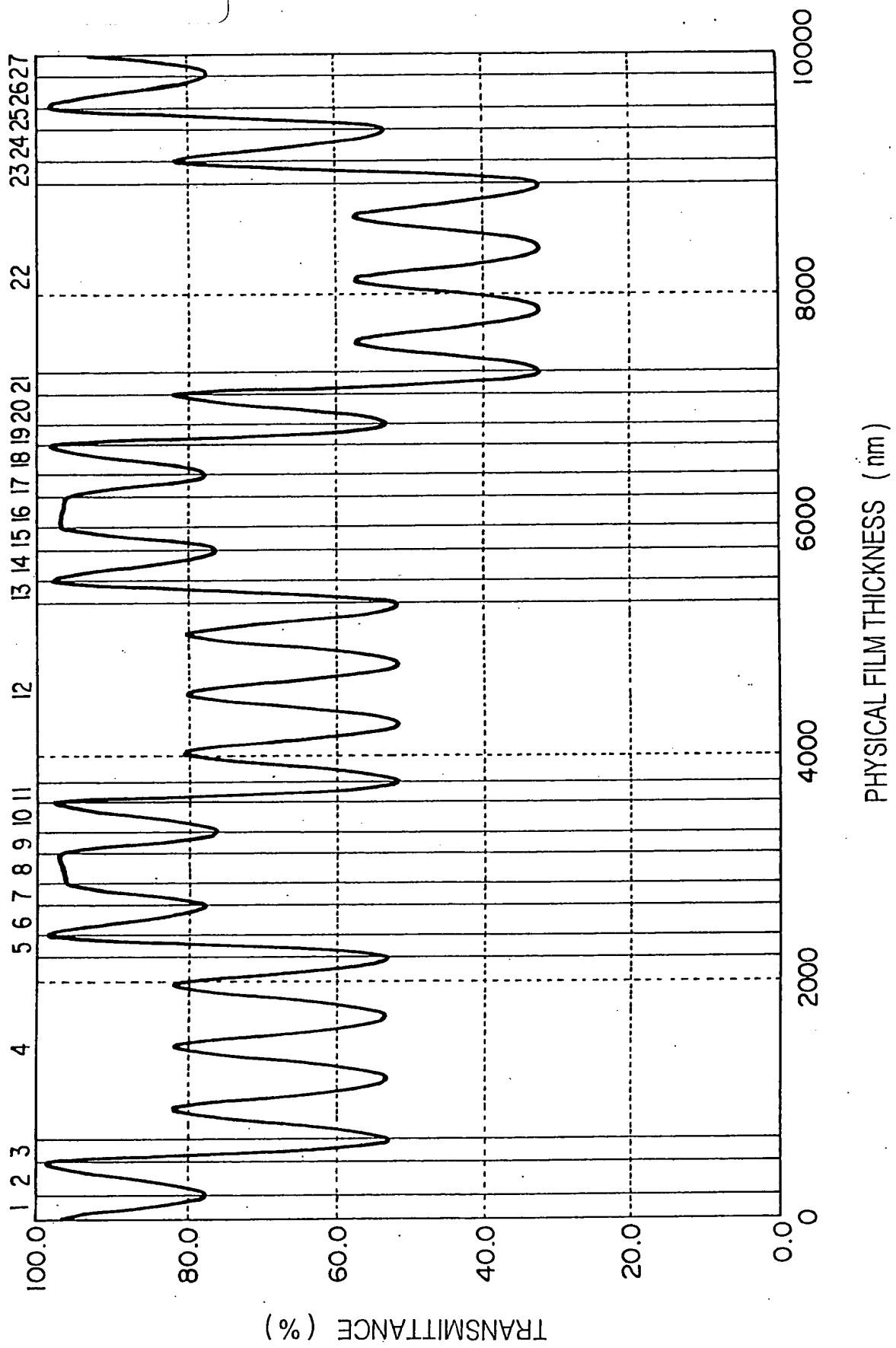

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
100.0
80.0
60.0
40.0
20.0
0.0
TRANSMITTANCE (%)
0
2000
4000
6000
8000
10000
PHYSICAL FILM THICKNESS (nm)

FIG. 8

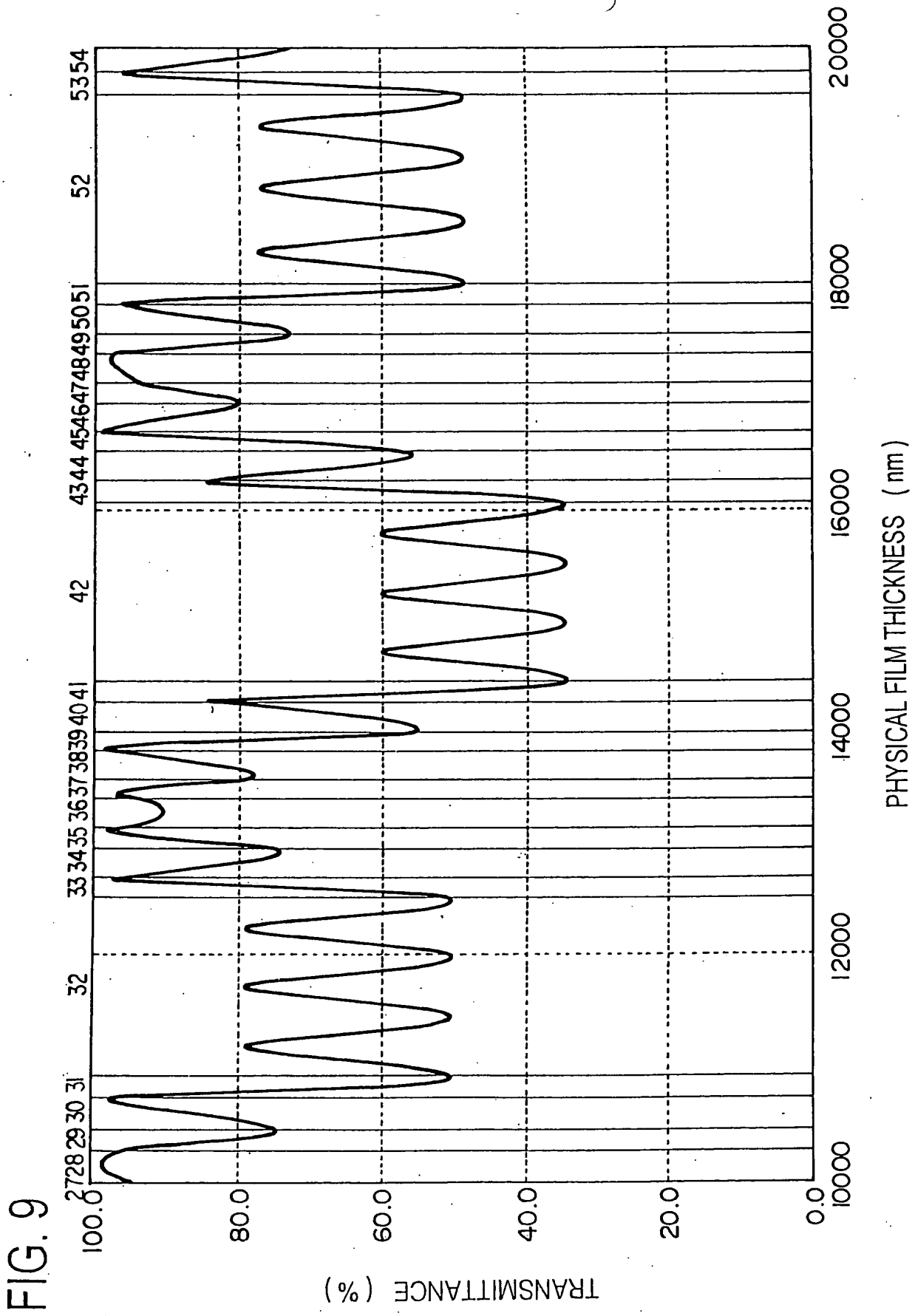
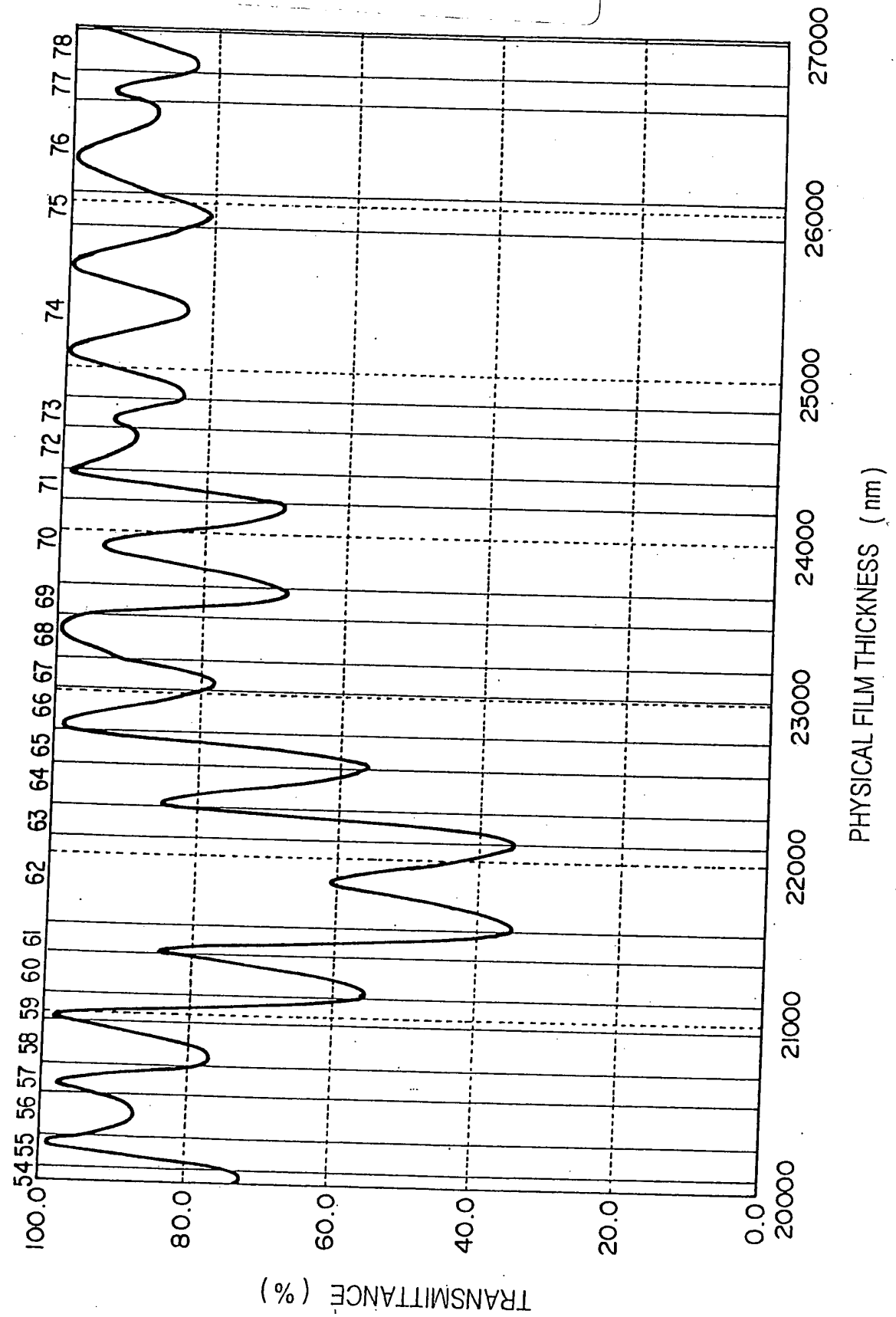

TRANSMITTANCE (%)
100.0
80.0
60.0
40.0
20.0
0.0
PHYSICAL FILM THICKNESS (nm)
10000
12000
14000
16000
18000
20000
27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54

FIG. 9

"Apparatus for Forming an Optical Multilaye Filter"
Inventors: Emiko Nishida, et al.
Contact: Gallagher & Lathrop (415) 989-8080
Docket: KPO10801

FIG. 10



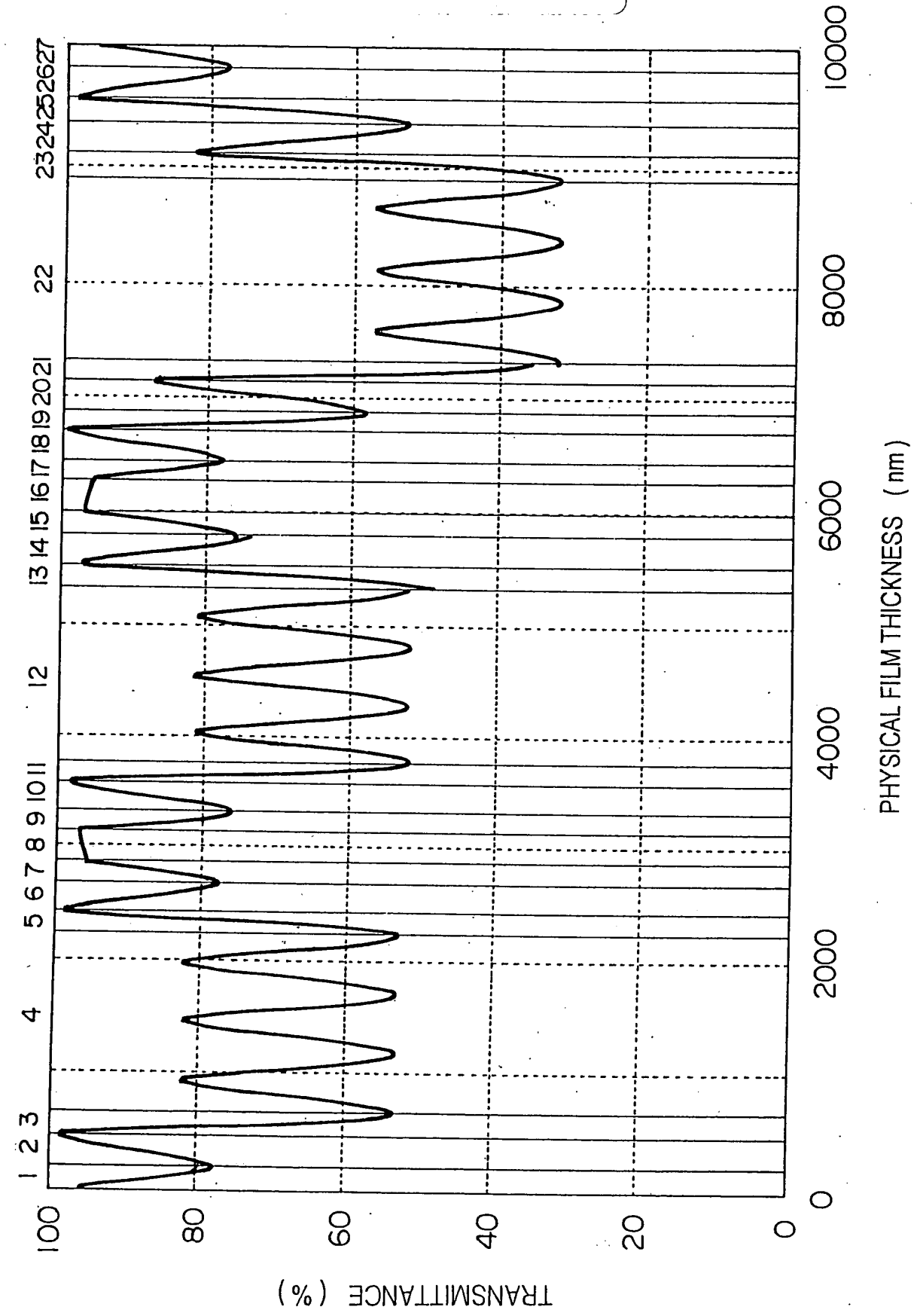

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
100
80
60
40
20
0
TRANSMITTANCE (%)
0
2000
4000
6000
8000
10000
PHYSICAL FILM THICKNESS (nm)

FIG. 11

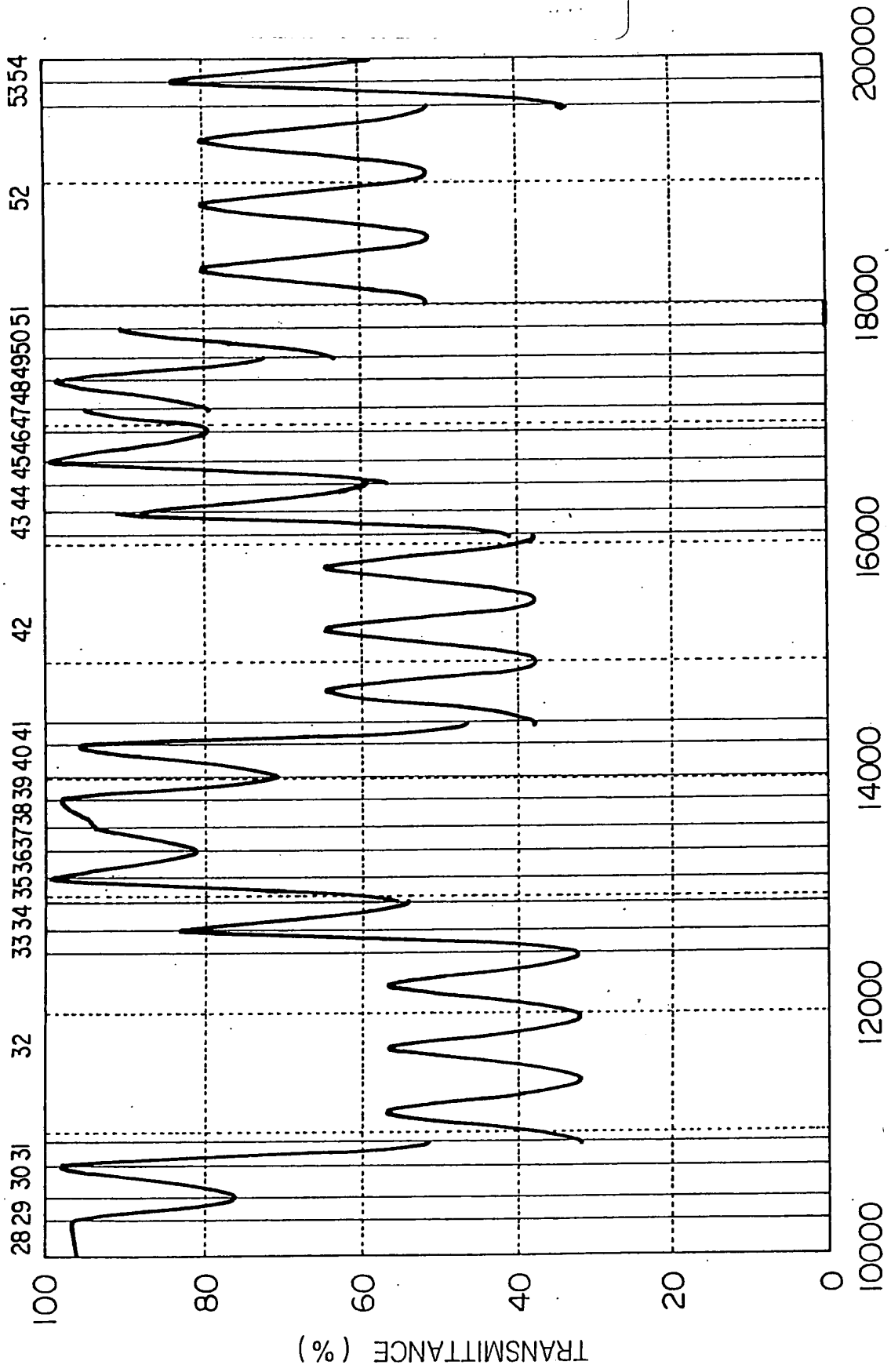

TRANSMITTANCE (%)
100
80
60
40
20
0
PHYSICAL FILM THICKNESS (nm)
10000
12000
14000
16000
18000
20000
28 29 30 31
32
33 34 35 36 37 38 39 40 41
42
43 44 45 46 47 48 49 50 51
52
53 54

FIG. 12

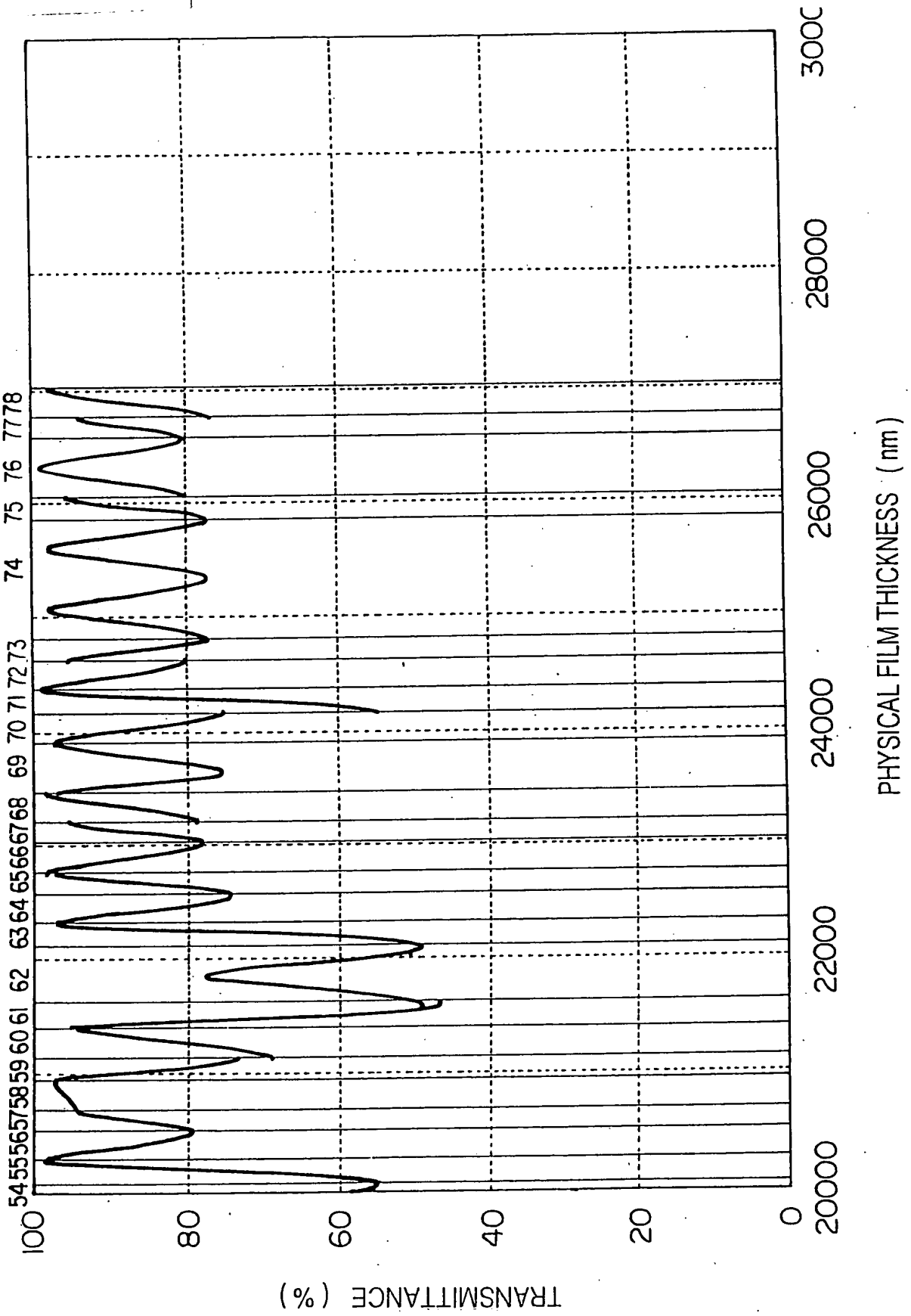
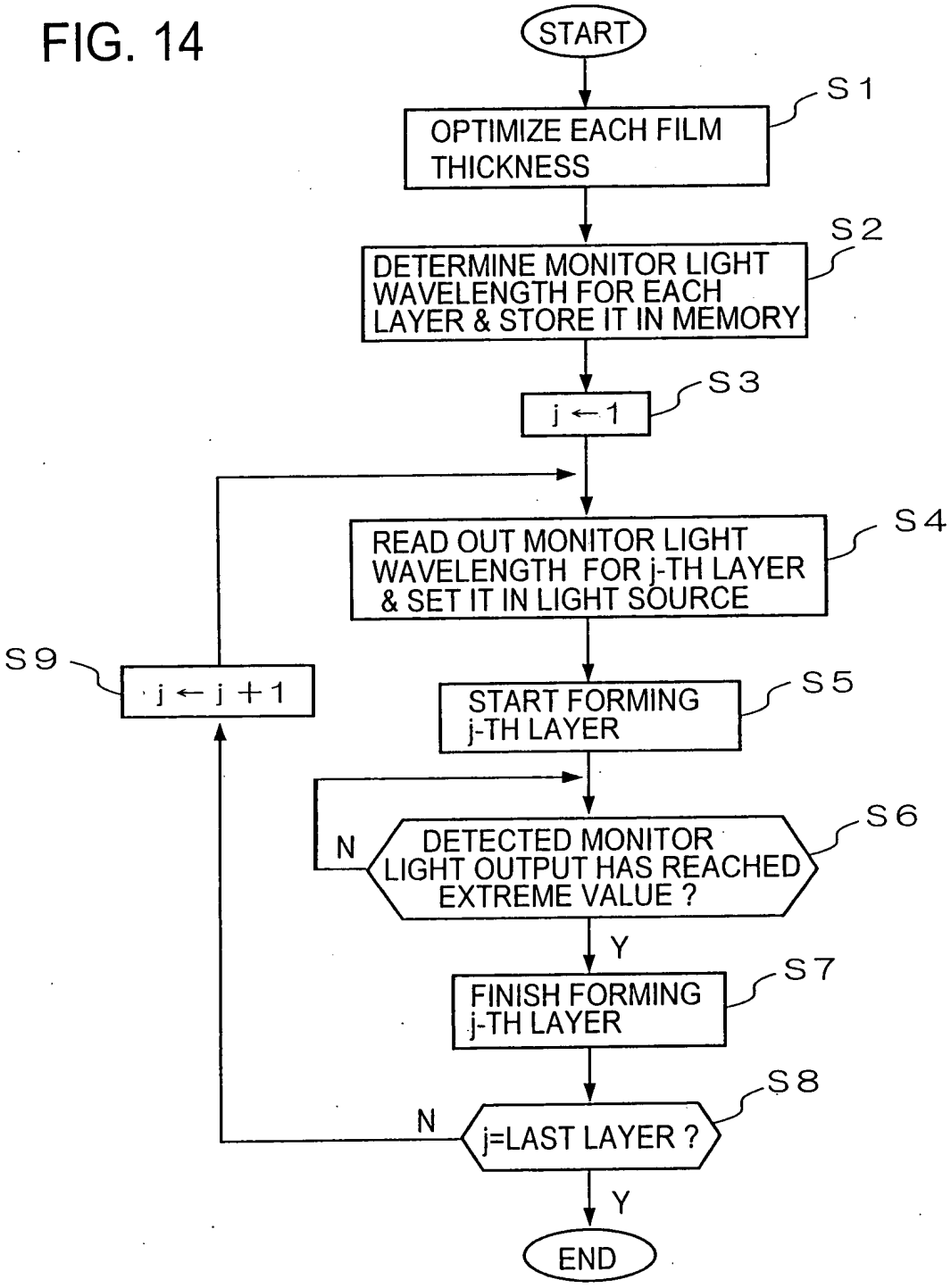

TRANSMITTANCE (%)
100
80
60
40
20
0
PHYSICAL FILM THICKNESS (nm)
20000
22000
24000
26000
28000
3000
54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78

FIG. 13

FIG. 14


START
S1
OPTIMIZE EACH FILM THICKNESS
S2
DETERMINE MONITOR LIGHT WAVELENGTH FOR EACH LAYER & STORE IT IN MEMORY
S3
j ← 1
S4
READ OUT MONITOR LIGHT WAVELENGTH FOR j-TH LAYER & SET IT IN LIGHT SOURCE
S5
START FORMING j-TH LAYER
S6
N
DETECTED MONITOR LIGHT OUTPUT HAS REACHED EXTREME VALUE ?
Y
S7
FINISH FORMING j-TH LAYER
S8
N
j=LAST LAYER ?
Y
END
S9
j ← j + 1

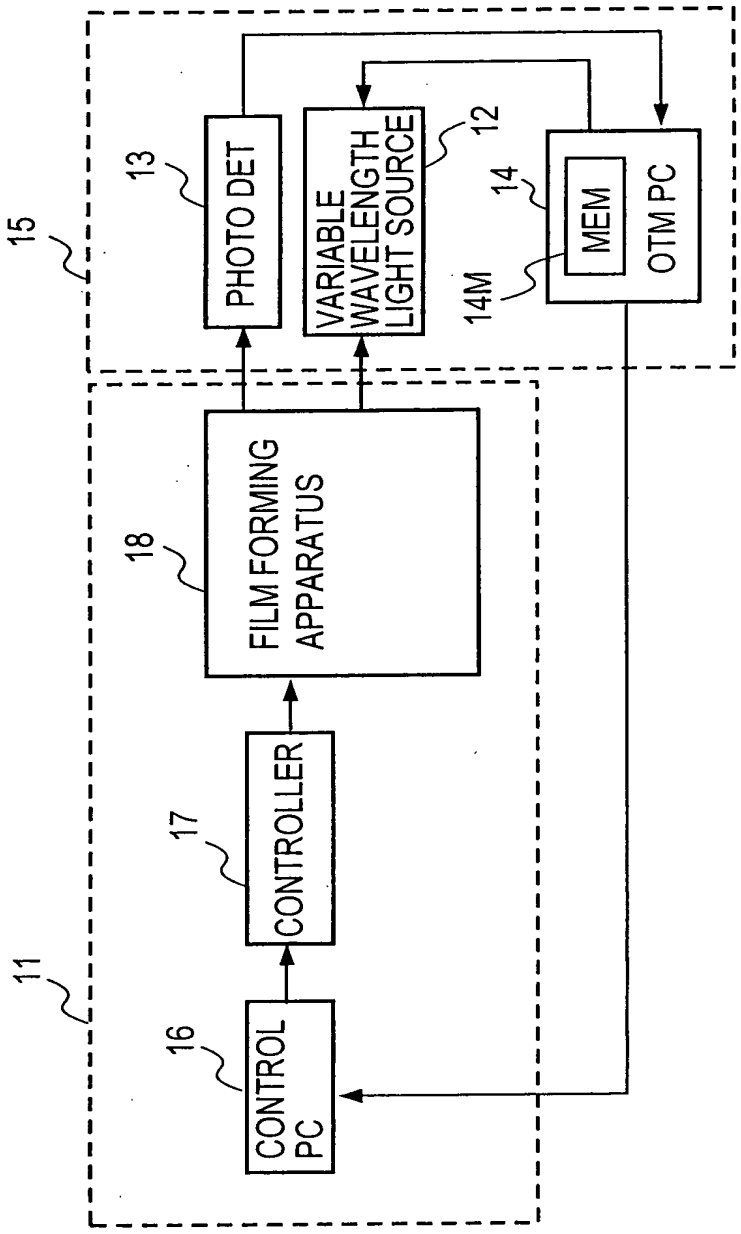

15
13
PHOTO DET
VARIABLE WAVELENGTH LIGHT SOURCE
12
14
MEM
OTM PC
14M
18
FILM FORMING APPARATUS
17
CONTROLLER
11
16
CONTROL PC

FIG. 15

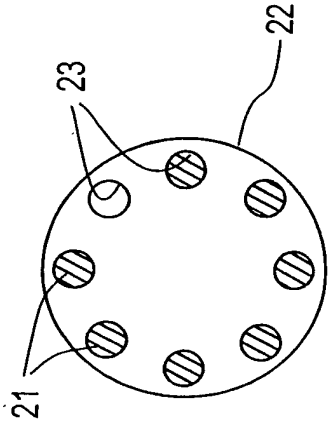


FIG. 16A

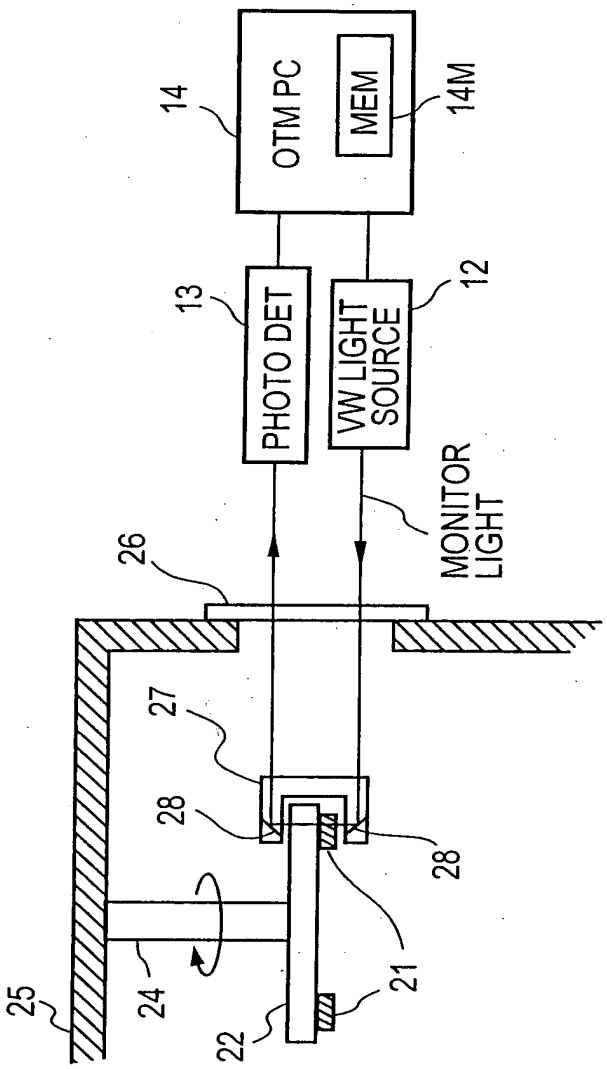


FIG. 16B

FIG. 17A

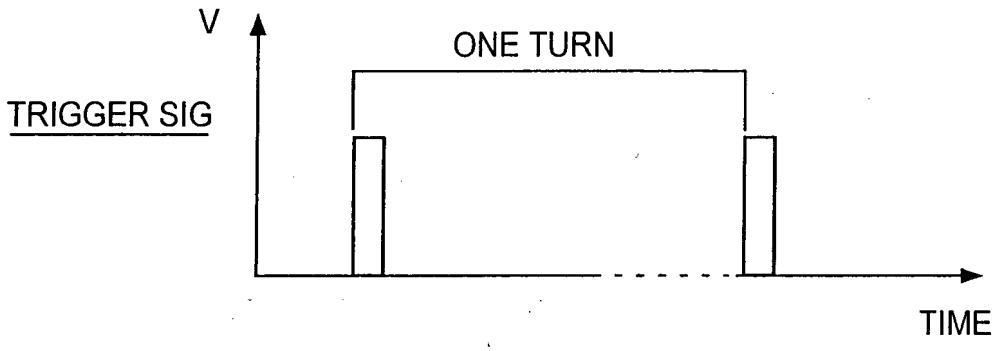
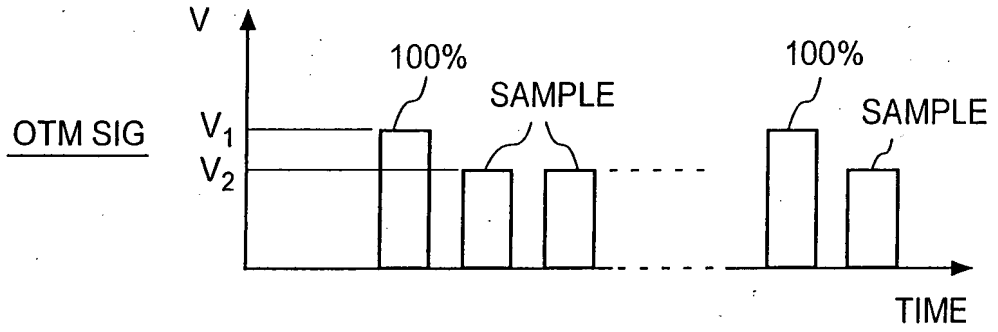



FIG. 17B